

### **Remarks**

The Applicants confirm their earlier election of Group I and Species II. The Applicants have cancelled Claims 13 – 14, 25 – 27 and 39 – 45 that are drawn to the non-elected Groups II, III and IV. Claims directed to the non-elected Species I and III have been retained. The Applicants specifically reserve the right to file one or more divisional applications directed to the subject matter of the cancelled claims.

The Applicants have amended Claim 15 to recite that the reinforcing fiber yarns have a yield of 350 to 3,500 tex, the auxiliary yarns have a yield of 8 tex or less and that the resin material is a powder-toughening material present in an amount of 2 to 17 %. Support for the above amendments may be found in the Applicants' Specification at, for example, page 32, line 4; page 47, line 15; page 51, line 18; page 50, line 2; and page 49, line 10.

Claim 18 has been amended to change the dependency to Claim 16 and to recite that a sizing or collecting treatment is performed on the auxiliary yarns forming the warp-direction auxiliary yarn group. Claim 19 has also been amended to be in conformance with amended Claim 15. Claims 20 and 21 have been cancelled. Entry into the Official File is respectfully requested.

The Applicants acknowledge the rejection of Claims 15 – 17, 20 and 22 – 24 under 35 U.S.C. §103 over the hypothetical combination of Nishimura '506 with Nishimura '160. The Applicants respectfully submit that the rejection is now moot as it applied to Claim 20. In any event, the Applicants respectfully submit that Claims 15 – 17 and 22 – 24 are patentable over the hypothetical combination of the two Nishimura disclosures for the reasons set forth in detail below.

By the above-described amendment to Claim 15 as to the reinforcing yarn, the language “a yield of 350 to 3,500 tex” has been added and, as to the auxiliary yarn, the language “a yield of 8 tex or less” has been added. Thus, not only the rate of yield between the reinforcing yarn and the auxiliary yarn, but also the absolute yields thereof, are defined. The purpose of defining the yield of auxiliary yarn is to reduce the crimp of reinforcing yarns due to the auxiliary yarns to a level capable of ignoring them. The yield of auxiliary yarns described in the Example of Nishimura ‘160 (ECD450 1/2) is 22.5 tex, and by such a yield, the advantage achieved by the Applicants is not exhibited (please refer to Comparative Example 1 of Table 1 and Comparative Example 3 of Table 2 in this Application). Specifically, if the yield of auxiliary yarns is merely increased accompanying an increase of the yield of reinforcing yarns, the crimp of the reinforcing yarns cannot be reduced to a level capable of ignoring them, and the advantage discovered by the Applicants is not exhibited. This is also because, if the yield of reinforcing yarns is merely increased, snaking of the filaments becomes great, and there occurs a problem of reducing the impregnation property.

Further, by the above-described amendment as to the resin material, the language “powder” and “2 to 17 %” are added. The resin material can improve not only the formation stability and handling property of the reinforcing fiber substrate, but also toughening and impregnation properties. These operations and advantages are neither taught nor suggested in either of Nishimura ‘160 and Nishimura ‘506.

In view of the above, the Applicants respectfully submit that Claims 15 – 17 and 22 – 24 are allowable for those reasons. In any event, the subject matter of those claims would still not be taught or suggested by the hypothetical combination because, even if the hypothetical combination were to be made, there would still be no teaching or suggestion concerning the

claimed aspect wherein a powder-toughening resin material is provided at 2 to 17 % by weight at least on a surface of the reinforcing fiber structure. Careful reference to both of Nishimura '160 and '506 reveals that neither disclose, teaches or suggests the claimed powder-toughening resin. Accordingly, even if one of ordinary skill in the art were to make the hypothetical combination, there would still be no teachings or suggestions concerning providing a powder-toughening resin material at 2 to 17 % by weight at least on the surface of the reinforcing fiber structure. Withdrawal of the rejection of Claims 15 – 17 and 22 – 24 is respectfully requested.

The Applicants acknowledge the rejection of Claim 18 under 35 U.S.C. §103 over the further hypothetical combination of Lewis with both of Nishimura '160 and '506. Claim 18 is patentable for the same reasons set forth above with respect to Claim 15. However, Claim 18 is still further patentable inasmuch as Lewis fails to provide teachings or suggestions that fill the gap of the Nishimura combination. In particular, Lewis discloses that the gap distance disclosed by Lewis has a dimension of about one-half inch (equals 12.7 mm)  $\times$  one-sixteenth inch (equals 1.6 mm). This is sharply different from the claimed range of 0.1 – 1 mm. Thus, the Applicants respectfully submit that the claimed gap is different from the gap taught by Lewis. Withdrawal of the rejection of Claim 18 is warranted on this basis alone.

Nonetheless, the advantage provided by the subject matter of Claim 18 is to improve the resin impregnation property of the substrate. In particular, this gap exhibits high operation and advantage in a non-crimp weave structure where warp-direction auxiliary yarns exist between the gaps. This operation and advantage is neither taught nor suggested in any of the Nishimura disclosures or Lewis. In particular, Lewis fails to provide teachings or suggestions as to non-crimp woven fabrics at all. Further, there is an utter failure to teach or suggest subjecting the


warp-direction auxiliary yarns to a sizing or collecting treatment. Withdrawal of the rejection is accordingly respectfully requested.

The Applicants acknowledge the rejection of Claim 19 over the hypothetical combination of Heck with both of the Nishimura disclosures. The Applicants respectfully submit that Claim 19 is patentable for the same reasons as set forth above with respect to Claim 15. Heck fails to provide teachings or suggestions that would cure the deficiencies of both of those disclosures. Withdrawal of the rejection is therefore respectfully requested.

The Applicants acknowledge the rejection of Claim 21 under 35 U.S.C. §103 over the hypothetical combination of Bockrath with both of the Nishimura disclosures. In view of the cancellation of Claim 21, the Applicants respectfully submit that that rejection is now moot.

In light of the foregoing, the Applicants respectfully submit that the entire Application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



T. Daniel Christenbury  
Reg. No. 31,750  
Attorney for Applicants

TDC:lh  
(215) 656-3381